164 **WITH POWERED MEANS FOR CREATING FLUID FORCE TO ATTRACT VEHICLE TO SURFACE OF TRAVEL**
116 **SURFACE EFFECT VEHICLES (I.E., GROUND EFFECT MACHINES)**
117 .Having propulsion or control means
118 ..Responsive to instability condition
119 ..Surface contacting control
120 ..Integrated with working fluid
121 ...With plural cushions
122 ...With dynamic seal or fluid curtain
123 .Spray deflector
124 .Expansible chamber
125 .Fluid bearing or fluid pad
126 .Rigid side walls
127 .Flexible skirt
128 ..Having outlet for working fluid
129 .Dynamic seal or fluid curtain
130 ..Recirculating
165 **WITH FLUID OR MECHANICAL MEANS TO ACCUMULATE ENERGY (I) DERIVED FROM MOTION OF VEHICLE OR (II) OBTAINED FROM OPERATION OF VEHICLE MOTOR, AND GIVE UP THE ENERGY (1) WHEN NEEDED FOR VEHICLE ACCELERATION OR (2) TO POWER AN AUXILIARY SYSTEM OF THE VEHICLE**
166 **WHEELED INFANT CARRIAGE OR CRIB WITH DRIVEN MEANS FOR RECIPROCATING IT LONGITUDINALLY**
2.1 **MOTOR SUPPLIED WITH POWER FROM EXTERNAL SOURCE**
2.2 .Source comprises or includes energy derived from force of nature (e.g., sun, wind)
167 **WITH MEANS FOR CONTROLLING OPERATION RESPONSIVE TO ELECTROMAGNETIC RADIATION, MAGNETIC FORCE, OR SOUND WAVES RECEIVED FROM SOURCE, OR REFLECTED FROM OBJECT OR SURFACE, LOCATED APART FROM VEHICLE**
168 .Having controlling means adapted to interact with stationary means which describes course of vehicle's travel
169 .Radiation, force, or waves reflected from external object or surface
170 **WITH MEANS RESPONSIVE TO SPEED OF VEHICLE FOR MAINTAINING SPEED AT, OR PREVENTING IT FROM EXCEEDING, A PARTICULAR VALUE**
171 .Including device to signal to operator existence of unusual or unintended speed
172 .Including device responsive to centrifugal force
173 ..And means to prevent tampering or unauthorized use
174 ..Having electrical switch
175 .Including fluid pressure actuated servomechanism
176 ..And electrical quantities comparison means for development of input pressure
177 ..And one or more electrical components for establishing or regulating input pressure
178 .Including electrically actuated servomechanism
179 ..And electrical quantities comparison means for development of electrical input
180 **SKI- OR SKATE-TYPE VEHICLE FOR IMPARTING MOVEMENT TO A PERSON STANDING THEREON**
181 .With power means or a portion thereof affixed to or built into the ski or skate
182 **INCLUDING ONE OR MORE SKI-LIKE OR RUNNER MEMBERS**
183 .Member substitutable for wheel type support structure
184 ..With propulsion element of endless track type
185 ...Track comprises substitute for or addition to propulsion element of traction wheel type
186 .With at least one surface-engaging propulsion element
187 ..Element shuffles along support surface
188 ..Spiral type element
189 ..Plural elements connected to and spaced along the plural throws of a common crankshaft
190 ..Endless track type element
191 ...Protruding from member

192 ...Plural tracks with interconnected drive or support means
193 ...With vertically movable track support located intermediate the forward and rearward extremities of the track
194 ..Plural discrete elements protruding from a wheel, hub, or shaft
195 ...Each element moves relative to wheel, hub, or shaft
196 ..Element comprises traction wheel
197 **WITH MEANS FOR DETECTING WHEEL SLIP DURING VEHICLE ACCELERATION AND CONTROLLING IT BY REDUCING APPLICATION OF POWER TO WHEEL**
198 **PORTABLE CARRIER SUPPORTS MOTOR VEHICLE IN TOTO AND IS PROPELLED THEREBY**
199 **WITH POWERED, GROUND-ENGAGING MEANS FOR PRODUCING, OR ASSISTING IN THE PRODUCTION OF, LATERAL MOVEMENT OF THE VEHICLE (E.G., FOR PARKING)**
200 .Comprising rotatably driven auxiliary wheel or endless track
201 ..Driven by frictional engagement with tire of vehicle traction wheel
202 ..Driven by auxiliary electric or fluid motor
203 .Comprising reciprocably driven stepper or rotatably driven cam
204 **WITH DEVICE FOR PROGRAMMABLY OPERATING VEHICLE`S STEERABLE WHEELS**
6.2 **STEERING BY DRIVING**
6.24 .Combined with manual steering
6.26 ..Interlocked
6.28 ...Electrical
6.3 ...Fluid
6.32 ...Lever and/or linkage
6.34 ....With controller cam
6.36 ....Lost motion type
6.38 ....Geared
6.4 ....With flexible and/or yieldable link
6.44 .Auxiliary steering motor
6.48 .Independently operable drive motors
6.5 ..Electrical
6.54 .Variable contact
6.58 .Controlled from rotatably mounted superstructure
6.6 ..Steering responsive to rotary movement of superstructure
6.62 .Combined
6.64 .Swinging traction frame responsive to differential drive
6.66 .Reversing drive to traction element
6.7 .Endless flexible track
7.1 **SPECIAL DRIVING DEVICE**
7.2 .Spiral type element
7.3 .Reaction jet propulsion
7.4 .Propeller type
7.5 .Vehicle mounted winch for pulling vehicle
8.1 .Stepper
8.2 ..Step or abutment ascending/desending type vehicle
8.3 ..Wheel and stepper type
8.4 ...Nonsupporting pusher type stepper
8.5 ..With alternately lifted supporting base and leg
8.6 ..With alternately lifted feet or skid
8.7 ..Endless or rotary type
9 .Portable track
9.1 ..Endless, flexible
9.21 ...Track substituted for drive wheel
9.22 ...Guided by walking attendant
9.23 ...With attendant station
9.25 ....Rider straddles vehicle (e.g., motorcycle)
9.26 ...Convertible from wheel type
9.28 ....Track remains with vehicle
9.3 .....Wheel or track contacts ground
9.32 ...With auxiliary obstacle surmounting means
9.34 ...With ground wheel
9.36 ....Opposite and laterally spaced
9.38 ....Steering
9.4 ...With hitch
9.42 ...Combined
9.44 ...With track-related steering means

9.46 ....Pivoted track frame
9.48 ...Laterally extendable track
9.5 ...Track support mounted for vertical movement
9.52 ....Adjustable
9.54 ....With spring
9.56 .....Longitudinally extending coil spring
9.58 .....Leaf or torsion spring
9.6 ......Transversely extending
9.62 ...Toothed wheel drive
9.64 ....Belt or chain driven
10 ..Annular
11 **MOTOR-CARRYING ATTACHMENTS**
12 .Driven steering wheel type
13 ..Single wheel
14.1 **VEHICLE TRAINS**
14.2 .Motorized trailer
14.3 ..All motors supplied from power plant of a single vehicle
14.4 .Drive means betwen vehicles through coupling
14.6 .Tractor drive effort varied by pull exerted by trailer
14.7 .Vehicle drive drives other vehicle wheel
14.5 .Overload release
15 **ADDITIONAL TRACTION WHEEL**
16 **TRACTION WHEEL ATTACHMENTS**
19.1 **STEERED BY WALKING ATTENDANT**
19.2 .Who steerably controls steerable wheel
19.3 .Handle movement controls vehicle drive
20 **WITH ROLLERS**
21 **SPECIAL WHEEL BASE**
22 .Five or more wheels
23 ..Driven steering wheel type
24 ...Stub-axle type
24.01 ..Having tandem steerable or translatable wheels or wheel sets
24.02 ..Displaceable wheel shifts or proportions load
24.03 ..Independently rotatable side-by-side dual wheels
24.04 ..With differential housing integrally fixed to vehicle frame
24.05 ..Rocker beam houses drive means
24.06 ..Plural propelling motors
24.07 ...Separate driving motor for each drive wheel
24.08 ..Each wheel positively driven
24.09 ..With interaxle differential
24.1 ..With drive interrupt means to either tandem drive wheel
24.11 ..Driven tandem wheels
24.12 ...One serially driven by other
24.13 ..Spring rocker beam
205 .With mechanism of occupant-powered type for developing torque for supplementing, alternating with, or replacing torque of motor
206 ..And means for controlling motor in response to either operation of occupant powered mechanism or vehicular movement resulting therefrom
207 ..Including member utilized in common by occupant-powered mechanism and by motor for transmitting torque output of each to wheel
208 .Collapsible or knockdown for storage or transport
209 .With means for changing number of supporting wheels, or for adjusting relative location thereof
210 .Having only three wheels
211 ..Including steerable and driven wheel
212 ...All wheels motor driven
213 ...Having motor mounted to swing with steerable wheel
214 ....Electrical-type motor
215 ..Including two wheels driven and having common axis of rotation
216 ...Electrical-type motor
217 ...Including endless element for transmitting drive to wheels
218 .Having only two wheels
219 ..Arranged in tandem
220 ...Electrical-type motor
221 ...Including rotating element for frictionally engaging and driving a wheel
222 ....And means for steering that wheel
223 ...Including steerable and driven wheel
224 ....Both wheels motor driven
225 ...Having frame element or fender constituting also exhaust or fuel passageway or fuel reservoir

226 ...Including longitudinally extending shaft for transmitting drive to wheel
227 ...Including resilient means for mounting driven wheel
228 ...Including resilient means for mounting motor
229 ...With means for cooling motor
230 ...With change-speed means between motor and driven wheel
231 ...Including endless element for transmitting drive and means for adjusting tension of element
36 **STEAM TRACTION ENGINES**
37 .Driven steering wheel type
38 ..Four wheels driven
39 .With boiler leveler
40 .Spring mounted on axle
232 **WITH MEANS FOR (1) PROTECTING MOTOR FROM IMPACT OF COLLISION, (2) UTILIZING MASS OF MOTOR TO ABSORB FORCE THEREOF, OR (3) PROTECTING OCCUPANT REGION OF VEHICLE FROM IMPACT-INDUCED SHIFTING OF MOTOR**
41 **WITH LEVELING DEVICE**
233 **HAVING FOUR WHEELS DRIVEN**
234 .With means for steering all driven wheels
235 ..Comprising articulated frame and means for pivoting one portion of frame relative to other portion about vertical axis located centrally of vehicle
236 ..In a path of travel other than that produced by turning the front wheels and the rear wheels substantially equally and oppositely
237 ..Comprising swingable, plural-wheel-carrying axles on individual, vertical axes of pivot
238 ...At least one axle being offset from its pivotable axis
239 ...Including longitudinally extending, endless element for transmitting drive to wheels
240 ..Including rotatable shaft extending longitudinally from wheels at one end of vehicle to wheels at other end for transmitting steering force thereto
241 ..Including longitudinally extending, endless element for transmitting drive to wheels
242 .Including pump and fluid motor, or generator and electric motor, for driving one or more wheels
243 ..And another means for driving the remaining driven wheels
244 .With means for braking either (1) one or more driven wheels or (2) structure transmitting drive to wheel
245 .Including separate mechanical assemblies for transmitting drive to each of two wheels at one end of vehicle
246 ..And assemblies for each of two wheels at other end, also
247 .With manually operated means for disengaging drive to one or more, but fewer than all, of the four wheels
248 .With differential means for driving two wheel sets at dissimilar speeds
249 ..And means for locking out the differential means
250 ...Manually operated type of lockout means
251 .Including longitudinally extending, endless element for transmitting drive to wheels
252 **HAVING AT LEAST ONE WHEEL BOTH DRIVEN AND STEERABLE**
253 .Steerable wheel has exclusive axis of pivot (i.e., stub-axle type)
254 ..Including flexible, axially rotatable means having one portion fixed to vehicle and another portion pivotable with wheel for transmitting drive thereto
255 ...Pivotable portion of means has additional structure of gearlike nature in driving engagement with corresponding structure on wheel

256 ...Means comprises rotatable shaft containing plural universal joints
257 ....Having at least one joint located on each side of axis of pivot
258 ...Pivotable portion of means includes ball or socket element of ball-and socket type universal joint
259 ....Joint includes intermediate ball, floating in groove, for positively engaging ball with socket
260 ...Pivotable portion of means includes gear element of intermeshing gear type universal joint
261 ....Joint includes at least one gear element rotatable on axis of pivot and intermeshing with gear element on pivotable portion
262 .....Joint also includes gear element on fixed portion engaging gear element on axis of pivot and vertically offset from gear element on pivotable portion
263 ...Having axis of pivot disposed between parallel planes defined by opposite sides of wheel
264 .With driven axle, mounting two or more wheels, swingable about axis of pivot, and motor mounted to swing therewith
265 ..Having axle offset longitudinally from axis of pivot
266 .With driven axle, mounting two or more wheels, swingable about axis of pivot, and swingable also about a horizontal axis
267 .With driven axle, mounting two or more wheels, swingable about axis of pivot, and shaft for transmitting drive coincident with axis
268 **WITH BELT OR HARNESS FOR RESTRAINING OCCUPANT, AND MEANS WHEREBY THE BELT OR HARNESS CONTROLS, OR IS CONTROLLED BY, THE FUNCTIONING OF A VEHICLE SYSTEM OR COMPONENT**
269 .System comprises transmission or element thereof
270 .System comprises ignition circuit or starter circuit or element of one or other
271 **WITH MEANS FOR PROMOTING SAFETY OF VEHICLE, ITS OCCUPANT OR LOAD, OR AN EXTERNAL OBJECT**
272 .Responsive to absence or inattention of operator, or negatively reactive to attempt to operate vehicle by person not qualified mentally or physically to do so
273 ..Utilizing weight, or lack thereof, of operator on seat or other support to determine presence or absence
274 .Responsive to engagement of portion of perimeter of vehicle with external object
275 ..And causing application of vehicle brake
276 ...Brake comprises or includes element moved or deformed into engagement with ground
277 ...And also interruption of at least one operational system of the vehicle or its motor
278 ....System comprises clutch
279 ..And causing interruption of an electrical system of the vehicle or its motor
280 ..And causing operation of vehicle steering system
281 .Comprising either movable closure member or fastening device therefor responsive to forward or rearward movement, or variations therein, of vehicle
282 .Responsive to sensing of acceleration, deceleration, or tilt of vehicle
283 ..And causing interruption of ignition circuit
284 ...And also impeding flow of fuel
285 ..And causing disruption of drive train between motor and wheels

286 .Comprising vehicle system or component responsive either to position of movable closure member or to status of fastening device therefor
287 .By preventing unauthorized or unintended access or use
288 ..Reponsive to failure of taxicab operator to activate fare meter upon boarding of passenger
289 ..Comprising device, mechanism, or system for either repositioning a movable or removable closure member or operating a fastening device therefor
290 .Responsive to weight of cargo load transported by vehicle
53.1 **MOTOR AS SOURCE OF POWER FOR OTHER MACHINE**
53.2 .Other machine is creeper drive on motor vehicle
53.3 .Other machine is mounted by three point hitch (i.e., Ford-Ferguson hitch)
53.4 .Hydraulic drive to other machine
53.5 .Electric drive to other machine
53.6 .Drive to other machine by power take-off (PTO) driven by wheel or axle of motor vehicle
53.61 ..PTO mounted directly on or engaging drive wheel to rotate therewith
53.62 ..PTO constantly driven with wheel selectively driven
53.7 .Drive to other machine by power take-off (PTO) at front end of vehicle
53.8 .Other machine is vehicle accessory
54.1 **POWER**
54.2 .With spring powered motor
55 .On lower running gear
56 ..Rear axle and body
57 ...Longitudinal shaft
58 ..Frame
59 ...Pivoted support on axle
60 ...Electric
61 ..Pivoted support on axle
62 ..Rear axle
63 .Motor moved by axle
291 .Having specific motor-to-body-frame relationship
292 ..Including change-speed gearing, or clutch, mounted in common with motor
293 ...With member or mechanism for controlling gearing or clutch, and means for minimizing transfer of movement, caused by operation of motor, to member or mechanism
294 ...With means enabling repositioning of motor and gearing or clutch
295 ...With wheeled auxiliary frame, resiliently joined to body frame, for supporting motor and gearing or clutch
296 ..Including means on body frame or motor for handling exhaust
297 ..Having motor shaft parallel to rotational axis of driven wheel
298 ..Including means enabling repositioning of motor
299 ..Including auxiliary frame for motor and resilient means for connecting auxiliary frame to body frame
300 ..Including means of nonsupporting nature for minimizing operation-induced movement of motor
65.1 .Electric
65.2 ..Combined with nonelectric drive means
65.3 ..With means on vehicle for generating power for the electric motor
65.4 ...Generating means is driven by a prime mover
65.5 ..With motor in or moveable with wheel
65.6 ..With gearing between electric motor and drive wheel
65.7 ...Gearing is a changeable ratio gearing
65.8 ..With electronic devices (logic gates, semi-conductors, vacuum tubes, etc.) in control circuit
301 .Including traction motor of turbine type driven by fluid product of combustion
302 .Including traction motor of kind driven by expansible fluid from source external of motor

303 ..Gas is product of treatment of a volatile fluid (e.g., gas is steam)
304 ...With means to condense gas discharged from motor
305 .Including traction motor of kind driven by noncompressible fluid received under pressure from a pump
306 ..Vehicle includes another system operated by same fluid
307 ..Having variable displacement type motor or pump
308 ..Having separate motor for each driven, surface-engaging member
309 .With means for handling motor exhaust
310 .With means to generate steam for a propulsion purpose
68.1 .With means to guide and/or control air for power plant cooling
68.2 ..With further means to utilize power plant cooling air for other purposes
68.3 .With means to guide and/or control combustion air for power plant
68.4 .Radiators and condensers, mounting
68.6 ..With protector for the radiator or condenser
68.5 .Battery mountings and holders
69.2 .Hoods
69.21 ..Pivoted about horizontal axis extending transversely of vehicle (e.g., alligator type or front end pivot)
69.22 ..With noise suppression means
69.23 ...Noise suppression means prevents hood from vribrating (i.e., anti rattlers)
69.24 ..With access openings having moveable or removeable closures
69.25 ..Water deflectors
69.3 .With means to increase idle speed of internal combustion engine to compensate for accessory load
69.4 .With fuel supply for internal combustion engine
69.5 ..Engine uses gaseous fuel
69.6 .Vehicle has plural power plants
69.1 .Underpans
337 **TRANSMISSION MECHANISM**
338 .Condition responsive (e.g., responsive to speed, load, etc.)
339 .With temperature control, lubrication or sealing
340 .With laterally movable wheel
341 .Wheel drives parallel wheel
342 .Tire directly driven
343 ..With particular gear structure
344 .Assembly feature
345 .Traction aid
346 .With protective guard or casing
347 .Mechanical movement transmission
348 .Final drive axle movable
349 ..Rigid axle
350 ...Belt or chain drive
351 ....With tensioning means
352 ...With lateral support between the differential or axle housing and the vehicle frame
353 ...With sprung differential
354 ....And differential support feature
355 ....And final gear drive
356 ...And final gear drive
357 ..Belt or chain drive
358 ..Swinging axle, single pivot
359 ..With sprung differential
360 ...And differential support feature
361 ...And final gear drive
362 ...And transverse leaf spring suspension
363 ..And final gear drive
364 .Variable speed or direction
365 ..Plural
366 ..Belt or chain
367 ..Fluid drive
368 ..Friction drive
369 ..Planetary
370 .With brake
371 .Final gear drive at each of two parallel wheels
372 ..Planetary
373 ..Belt or chain
374 .Gear transmission relationship to frame or axle
375 ..Transmission is differential
376 .Shaft relationship to frame or shaft
377 .Transmission support
378 ..Differential or axle housing

379 ..Shaft
380 ...With propeller shaft casing, (e.g., torque tube)
381 ...Vibration damping
382 ..Flexible support
383 .With particular drive coupling
384 ..Relative axial movement
385 ..Drive connection to wheel
76 **COMPENSATING DEVICES**
314 **WITH PLURAL FUEL TANKS**
315 **MANUALLY ACTUATED CONTROLLING DEVICES**
316 .By other than hand or foot of operator
317 .On mine car vehicle
318 .On delivery-type vehicle
319 .With rein means
320 .With vehicle control extension
321 .With plural control stations
322 ..Side-by-side
323 ..For single control means
324 ..With tool or equipment control
325 ..Braking controllable by passenger
326 .With movable control station or seat position
327 ..Movable cab
328 ...Tilting
329 ..Simultaneously movable seat and control
330 ..Seat on seat portion movable to alternate positon
331 ...With tool or equipment control
332 .With tiller-type handle
333 .Multiple vehicle functions controllable by single device
334 .With adjustable operator engageable control
335 .With fuel or air throttle control
336 .With transmission control
78 .Steering shaft
400 **STEERING GEAR**
401 .Steering by terrestrial guide
402 .No mechanical connection between steering shaft and steering gear
403 ..Hydraulic
404 .Power assist alarms or disablers
405 .With alternate emergency power means (e.g., pump, gearing, etc.)
406 ..With fluid backup
407 ..With electrical backup
408 .Each wheel steerable
409 ..Occupant steered
410 ...With condition modulated steering
411 ..Independently controlled steerable wheels
412 ..With electric power assist
413 ...With electric power assist to all wheels
414 ..With fluid power assist
415 ...With electrical control
416 ..With mechanical power assist
417 .With fluid power assist
418 ..Between articulated wheeled vehicle sections
419 ...Combined with another steering mode
420 ...Reciprocating power assist
421 ..With condition modulated steering
422 ...With electrical control
423 ....Vehicle speed condition only
424 ..With swinging axle
425 ..Including flexible power transmitting means
426 ..Steering column supported
427 ...Including rack gear means
428 ..With rack and pinion gearing intermediate steering shaft and power assist
429 ..Having rotary working member
430 ..Having flexible working member
431 ..Steering linkage includes interengaging gear means
432 ..With plural working members
433 ...Working member movement traverses vehicle path
434 ..Working member movement traverses vehicle path
435 ...Moves separate rod for each wheel steering arm
436 ...Working member part engages wheel steering arm
437 ...Working member part engages tie rod
438 ..Movable working member engages wheel steering arm
439 ..Movable working member is a moving cylinder
440 ..With linkage intermediate working member and wheel steering arm
441 ..Device to control pressure (e.g., valve)
442 ..Hydraulic circuit

443 .With electric power assist
444 ..Specific mechanical feature
445 ..Controlling rear wheels
446 ..Condition modulated
447 .With mechanical power assist
448 ..Swinging axle
449 ..Bogie truck having more than one axle
84 **DUST GUARDS**
89.1 **BODIES**
89.11 .With passenger compartment having article receiving or removing means
89.12 .Tractor and similar vehicle cabs
89.13 .Movable cab or operator's station
89.14 ..Tilting
89.15 ...Via power or power enhancing means
89.16 ..Overmotor cab
89.17 .Movable body portion facilitating engine access
89.18 ..Cab portion
89.19 .Overmotor cab
89.2 .With means for handling exhaust of a motor
90 .Dashboards
90.6 .Footboards and pedal guards
311 **FRAME**
312 .With structure adapted to receive or support a motor, change-speed gearing, or other power train element
313 **MISCELLANEOUS**

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